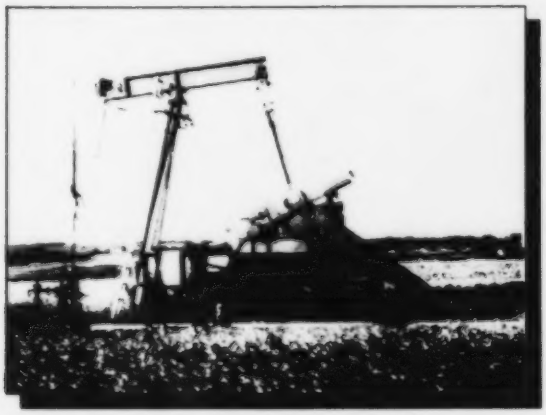
Turtle Mountain Conservation District Management Plan

20 Year Plan
1988-2008



Manitoba
Natural Resources

Conservation
District Authority

Resource Management for Our Community

89-04917/

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turtle mountain conservation district

Box 508, Deloraine, Manitoba, ROM OMO
Phone (204) 747-2530

December 1988

Dear Resident,

On behalf of the Turtle Mountain Conservation District board, I am happy to present the final draft of our resource management plan. Based on information and ideas from local citizens and representatives of several government departments, it is our "best guess" about future conservation program needs for our area. We have kept recent conditions uppermost in our minds as we prepared it.

It is impossible to make rigid plans for twenty years into the future. These ideas are intended to be guidelines for programs as we approach the 21st Century. Major reviews will occur every five years. Also, the plan is flexible enough to allow some modifications from year to year if unusual circumstances make that necessary.

The general directions outlined in the plan are largely based on local ideas. Comments from local people were extremely valuable during its preparation. As we begin to develop these guidelines into specific programs, we will still need your participation.

The fate of new conservation programs will be directly linked to public awareness and support. As they increase, so will our chance of success.

We appreciate the interest you have shown in the past. We look forward to your continuing support as we direct ourselves to the future.

Yours truly,

D Crowe

Dennis Crowe
Chairman

Manitoba

Minister of
Natural Resources

Room 314
Legislative Building
Winnipeg, Manitoba, CANADA
R3C 0V8

December 1988

Mr. D. Crowe, Chairman
Turtle Mountain Conservation District
220 South Railway
Deloraine, Manitoba
R0M 0M0

Dear Mr. Crowe:

I have now had an opportunity to review the Board's first management plan. The Board is to be commended for its efforts and the strong commitment to conservation expressed in the many and varied district programs.

Conservation, to me, is the wise use and enjoyment of our resources today, with tomorrow in mind. Your comprehensive approach to land and water management, your strong support for conservation education and your willingness to work with local municipal councils and planning districts in implementing your program assures me that the Turtle Mountain Conservation District Board is well prepared for today and tomorrow.

The Conservation Districts Program is very much a partnership between Manitoba and local people. As Minister, I will do everything possible to ensure that Manitoba continues to fulfill its part of the partnership. Your management plan, which sets out a clear vision of where you want to go, will be of considerable assistance.

In my opinion, the Board now faces the considerable challenge of cooperating locally to implement your plan. My Department will assist the Board whenever possible.

It is with considerable pleasure that I approve your management plan. Congratulations on a job well done.

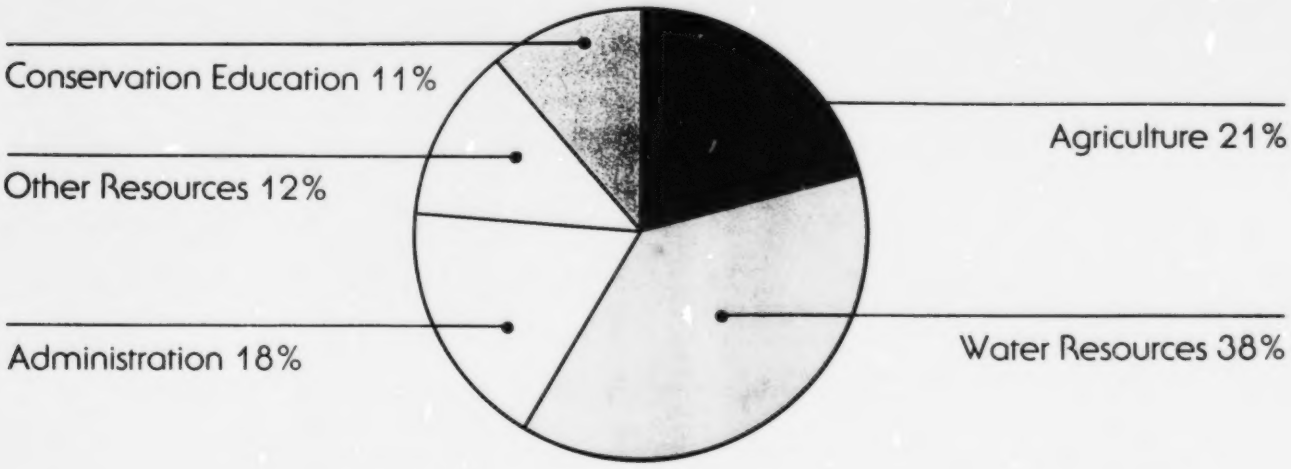
Yours truly,

Jack Penner
Minister

Highlights

Total Budget (1988/1992) $2.4 Million

Spending in % of Board's 5 Year Budget



The Board's program budget is $2.4 million over the next 5 years, starting with $319,500 in 1988 and gradually increasing to $652,200 in 1992. The rate of increase represents an annual average growth rate of about 8%, or 4% after inflation.

Funding for the 5-year budget will be covered mainly by the Provincial Grant, which will contribute $1.4 million. Municipal levies will account for an additional $522,000 over the 5-year interval. This includes drawing $18,000 from the Board's current operating surplus. Other sources are expected to make up the remaining $478,000. Achievement of the plan objectives depends on the Board securing this external funding.

Just over $1.4 million of the total 5-year budget — about 60% — will cover programs in agriculture and water resources, reflecting a district-wide consensus that these areas are of critical importance and merit funding accordingly.

Programs in agriculture include $272,000 to encourage local farmers to practice residue farming, and $135,000 for a streamlined version of the Forage Seed Assistance Program. In the water resources category, major spending has been proposed on grassed waterways projects ($370,000), on erosion check structures and other on-farm water management projects ($270,000), and on completing a handful of large and small water storage projects ($275,000).

The remaining $1 million of the 5-year budget will cover programs in conservation education, other resources, and administration. Key conservation education programs include setting up a project in cooperation with the International Peace Garden, and assistance to schools in acquiring books and equipment for teaching conservation education. Most of the funding for Other Resources has been earmarked for habitat development and protection, with the remainder for developing small recreation projects.

In 1992, this Management Plan will be considered again as part of a standard 5-year review process, and a new set of proposals developed for public review and comment. Any changes to this plan will be reviewed publicly and with local councils. We are also considering an annual report to keep you informed.

Over the next 20 years, the Board proposes to focus on soil erosion, water management, and conservation education. Wildlife habitat programs will also be important. But these directions and focal points could change as we enter the 1990s and beyond.

Assistance from the local municipal councils and planning districts in setting program direction and targets will be needed if the management plan is to be successful in meeting local needs, both now and in the future. The Board will consult closely with these decision makers to ensure a coordinated approach to land and water management.

Past and Future Priorities

This chart shows what the Board's priorities have been for the last 7 years, and what the Board's priorities will be over the long term, to the year 2008.

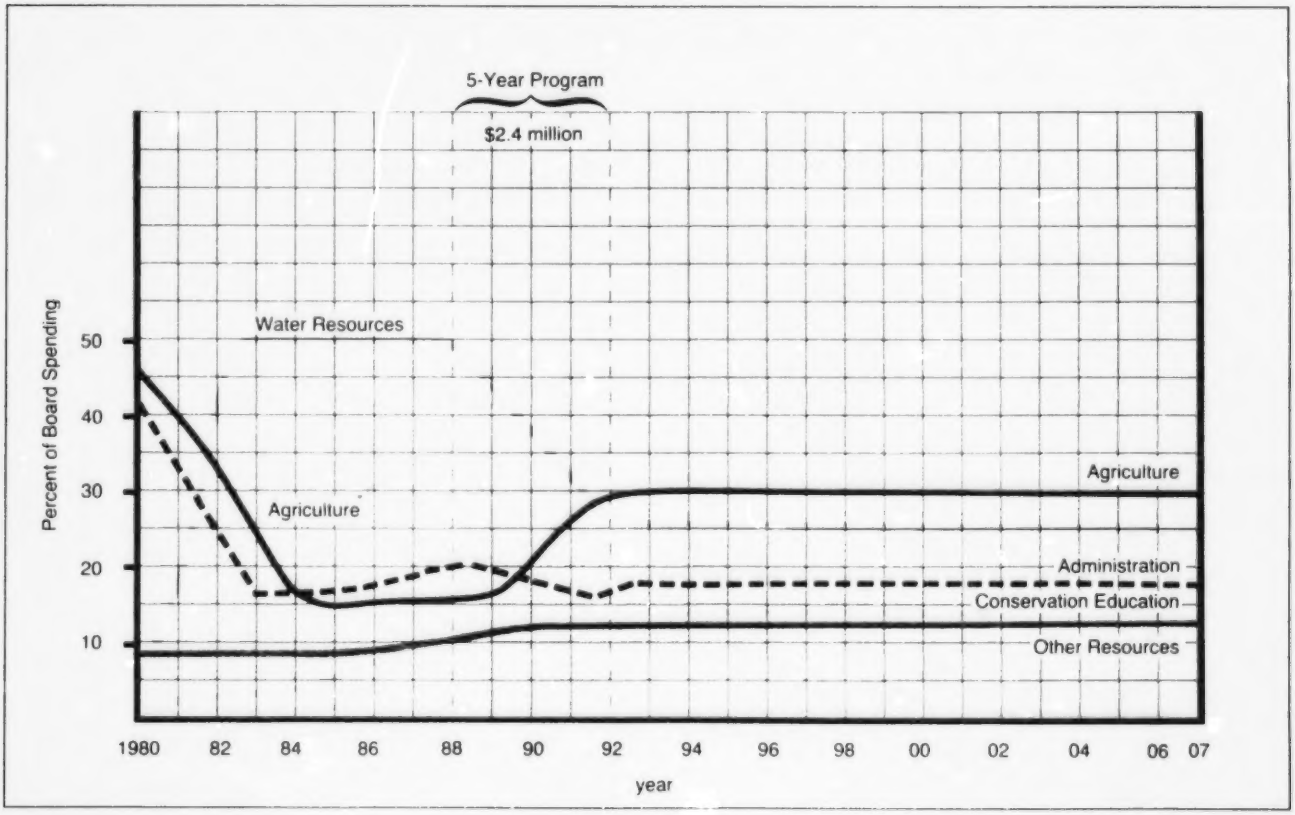
Major Water Resources Projects Completed
Over the last 7 years, much of the Board's budget was spent completing several expensive water resources projects such as the Adair Dam and over 85 miles of grassed waterways.

Now that many of the Board's program objectives in this category have been met, the Board intends to reduce spending on water resources over the next 5 years.

More Funding for Agriculture Programs
Over the next 5 years, the Board will substantially increase spending on agricultural programs until they constitute about 30% of the overall Board budget in the long term. This amounts to a reversal of a trend that saw Board spending on agricultural programs drop from a high of 45% in 1980 to a low of 15% in 1986. We did this to allow a greater share of the budget for water resources programs. Now that this is complete for the most part, we intend to put more emphasis on agricultural programs.

55% to Soils and Water
Shifts in spending on water resources and agricultural programs are designed to bring both programs more into balance. Over the long term, the Board will commit roughly 55 to 60% of its budget to these two priority areas.

Program Trends 1980-2007



Public Response to DRAFT MANAGEMENT PLAN — Positive

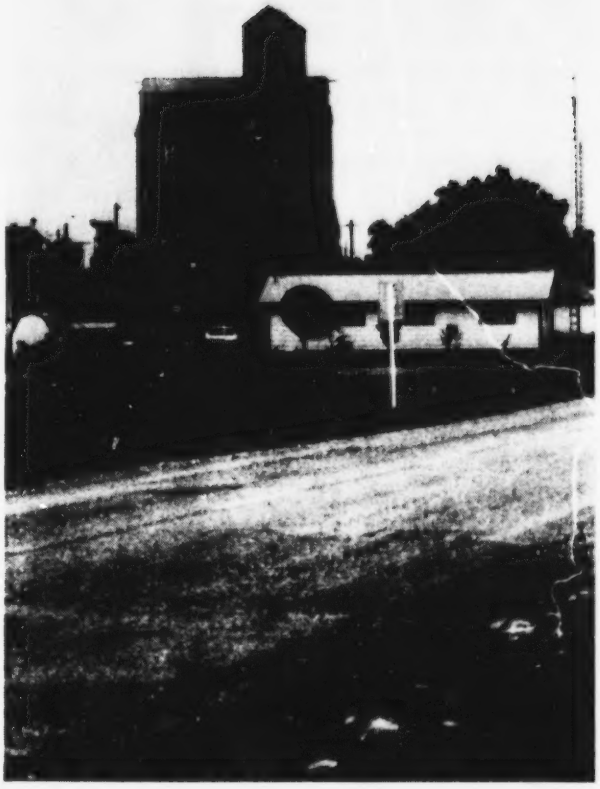
The programs presented in this management plan are based in large part on public and government reviews at key stages of the process.

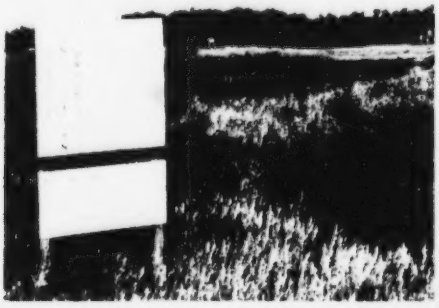
The DRAFT plan was distributed in the fall of 1987 to all households in the District, all municipal councils, special interest groups and government departments and branches. We also held special meetings and workshops with councillors, special interest groups, our subdistrict committees, and hosted open houses in Deloraine and Waskada. The Morton council hosted an open house in Boissevain.

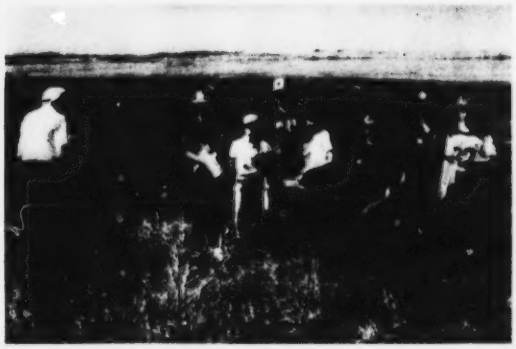
The Board's proposed programs drew a very positive response. The issue of agricultural land drainage was a major local issue in Morton.

Overall, we felt that there was general community support for the programs proposed in the Draft Plan and we are going to implement them through our approved management plan.

One issue — local financing of the 5-year program — received some discussion. Although there was no widespread public concern over asking for an increase in the conservation levy, there was a Board concern over asking for additional funds at this time. Accordingly, the Board will be using $18,000 of its reserve fund to complement the municipal contribution in the first and second year, resulting in no increased levy for 1988 or 1989.







Board Resolution

WHEREAS the board of Turtle Mountain Conservation District No. 4 believes that the prudent management of soil, water and associated resources is essential to the continued well-being of the people of the Turtle Mountain area, and

WHEREAS such prudent management requires the development of long-range resource management recommendations and guidelines, and

WHEREAS the board of Turtle Mountain Conservation District No. 4 has – with the assistance of local citizens and representatives of numerous provincial agencies and in accordance with the terms of reference they adopted on May 8, 1986 – prepared their resource management plan, and

WHEREAS Section 14 of the Conservation Districts Act (Chapter C175, S.M.) directs a conservation district board to ". . . develop and, with the written approval of the Minister, implement a management plan in respect of a district",

THEREFORE BE IT RESOLVED that the board of Turtle Mountain Conservation District No. 4 approve the attached resource management plan and recommend it to the Minister of Natural Resources for his approval, and

BE IT FURTHER RESOLVED that the board of Turtle Mountain Conservation District No. 4 pledge to continue their dedication to wise resource management by developing specific programs to implement the objectives outlined in their plan.

Moved by: Bert Barwick

Seconded by: Alan Ransom

Approved: January 18, 1988

Note:

This is a revised version of the DRAFT MANAGEMENT PLAN prepared in the Summer of 1987, and reviewed in the Fall of that year. The only significant change between the DRAFT and this approved plan is the deferral of two major water storage projects to 1990 and 1992. The change will allow for better project planning and time to ensure adequate funding for the projects.

D Browe
(Chairman)

S.C. Dee
(Secretary-Treasurer)

John McMillan
(Board Member)

(Board Member)

Harriet McCall
(Board Member)

Roy Mann
(Board Member)

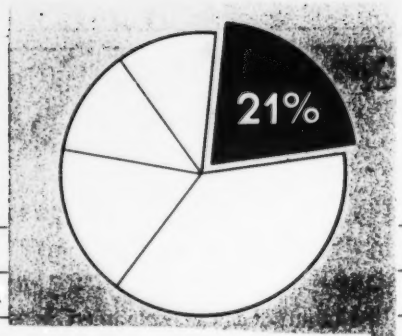
Bert Barwick
(Board Member)

Jean Holden
(Board Member)

Agriculture

Proposed Programs 1988-1992

Land Management	$272,000
Forage Seed Assistance	$135,000
Gully Stabilization	$ 66,000
Shelterbelts	$ 42,000
TOTAL	$515,000



Proposed spending on agricultural programs over the next 5 years represents 21% of the Board's budget.

Land Management

Land management is the most important part of the Board's agriculture program, accounting for about 53% of total program spending.

Residue Farming

We consider that residue farming — the management of plant residues for year-round protection of the soil surface — is one of the most effective ways to control wind and water erosion and preserve moisture.

The Board will implement an incentive program to promote and encourage residue farming. Program options include:

- acreage payment
- reduced equipment rentals
- herbicide assistance.

The Board endorses the Manitoba Agriculture Soil Management Recommendations for Erosion Control and Salinity listed on pages 10 and 11. The Board is developing programs to assist landowners in meeting the Guidelines.

Rotational Grazing

It is commonly believed that soil erosion affects only cultivated lands. However, there is plenty of evidence in the District of soil erosion and lost productivity resulting from improper pasture management.

In response to this problem, the Board will set up at least one rotational grazing demonstration project in the District over the next 5 years.

Forage Seed Assistance

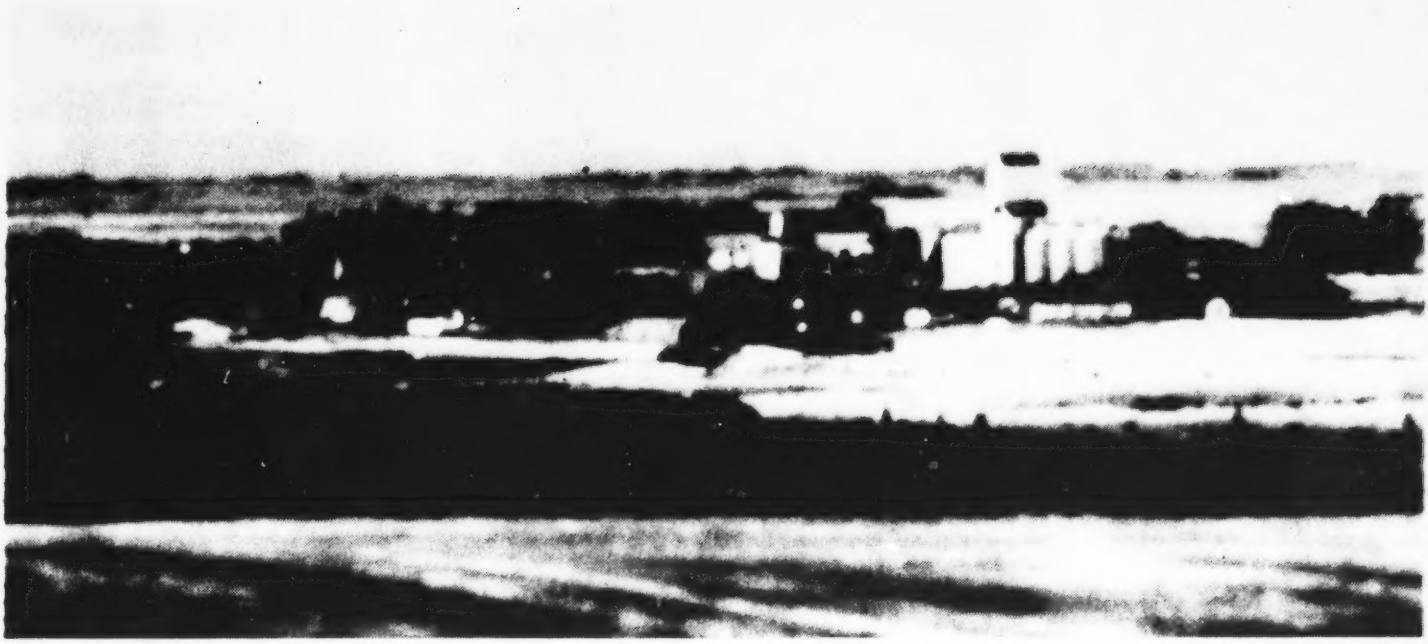
The Board will continue its Forage Seed Assistance Program over the next 5 years, but develop new eligibility criteria. Various mixtures of forage seed will be provided, with erosion and salinity prone soils receiving priority. The program will be monitored yearly.

Gully Stabilization

The Board will continue its cost-shared Gully Stabilization Program as well as its current focus on repairing eroded gulleys on agricultural land.

Shelterbelts

The Board will continue the Shelterbelt Program at current levels — about 6 miles a year.



Proposed 5-Year Program — Agriculture

	1988	1989	1990	1991	1992	TOTAL
Land Management	12,000	16,000	49,000	80,000	115,000	272,000
Forage Seed Assistance	30,000	30,000	25,000	25,000	25,000	135,000
Gully Stabilization	12,000	12,000	13,000	14,000	15,000	66,000
Shelterbelts	7,500	8,000	8,000	8,500	10,000	42,000
% of Board Total Program	15	15	20	25	30	21
SUB-TOTAL	61,500	66,000	95,000	127,500	165,000	515,000

Public Response to the DRAFT PLAN – Agriculture

Everyone agreed with the Board that a high priority should be given to land management, to reduce the adverse effects of wind and water erosion and salinity.

Most people agreed that landowners, local municipalities, planning districts, and the Turtle Mountain Conservation District must accept the major responsibility to ensure wise stewardship of our soils. More cooperation is needed between these parties, particularly to maintain vegetation along the escarpment, promote residue farming, and encourage shelterbelts where these are effective.

Two concerns were raised. First, many landowners are already practicing good land management so why pay other farmers to do it? Second, given the limited dollars in the program, how much can really be accomplished?

The Forage Seed Assistance, gully stabilization, and shelterbelt programs were seen as good, on-going efforts that help to direct landowner decisions toward conservation. The programs should be targeted to problem areas and monitored closely.

Soil Management Recommendations for Erosion Control and Salinity

Guidelines for Landowners

Guidelines for Controlling Wind Erosion

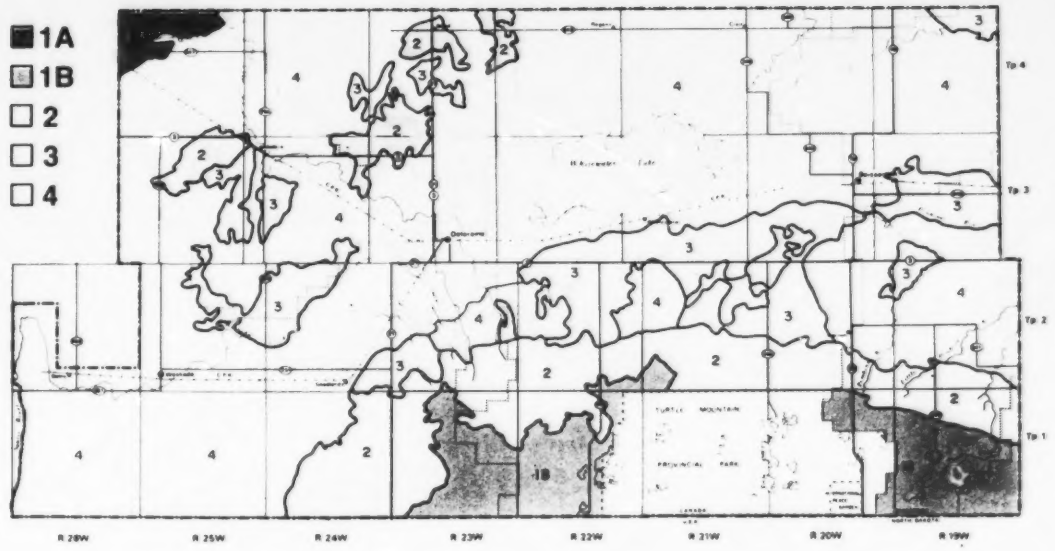
		WHEAT	BARLEY	CANOLA	FLAX	SUNFLOWER	FORAGES
Landscape Unit 1A	FLAT-RESIDUE REQUIREMENT (lbs/ac) (% Ground Cover)	>1400 (>62%)	>1400 (>62%)	>2100	>1150	>3750 (>45%)	Continuous forages
		— fields should be 40 acres in size and shelterbelts to be planted 660 feet apart. — continuous cropping — no summerfallow. — crop residues should be distributed evenly on soil surface by using straw choppers and chaff spreaders and/or by harrow operations. — tillage in excess of that required to apply annhydrous ammonia is not recommended.					
	RESIDUE BALED FALL TILLAGE	none	none	N/A	none	N/A	N/A
	SPRING TILLAGE	1 cultivator operation	1 cultivator operation	N/A	1 cultivator operation		
	RESIDUE NOT BALED FALL TILLAGE	— should not exceed 1 cultivator operation whether done in spring or fall.		none	none	none	N/A
	SPRING TILLAGE			1 cultivator operation	1 cultivator operation	1 tandem Disc operation	N/A
Landscape Unit 1B	FLAT-RESIDUE REQUIREMENTS (lbs/ac) (% Ground Cover)	1200-1400 (58-62)	1200-1400 (58-62)	1900-2100	1000-1150	N/A	Continuous forages
		— continuous cropping — no summerfallow or sunflowers in the rotation. — crop residue should be distributed evenly on soil surface by using straw choppers and chaff spreaders and or by harrow operations. — tillage in excess of that required to apply annhydrous ammonia is not recommended.					
	RESIDUE BALED FALL TILLAGE	none	none	N/A	none	N/A	
	SPRING TILLAGE	1 cultivator operation	1 cultivator operation	N/A	1 cultivator operation		
	RESIDUE NOT BALED FALL TILLAGE	— should not exceed 1 cultivator operation whether done in spring or fall.		none	none	N/A	
	SPRING TILLAGE			1 cultivator operation	1 cultivator operation	N/A	
Landscape Unit 2	FLAT-RESIDUE REQUIREMENT (lbs/ac) (% Ground Cover)	1000-1200 (50-58%)	1000-1200 (50-58%)	1600-1900	800-1000	>5100 (>50%)	N/A
		— continuous cropping — no summerfallow. — crop residue should be distributed evenly on soil surface by using straw choppers and chaff spreaders and/or by harrow operations. — tillage in excess of that required to apply annhydrous ammonia is not recommended.					
	RESIDUE BALED FALL TILLAGE	none	none	N/A	none	N/A	
	SPRING TILLAGE	1 cultivator operation	1 cultivator operation	N/A	1 cultivator operation	N/A	
	RESIDUE NOT BALED FALL TILLAGE	— any combination of tillage practices that does not exceed 2 cultivator operations.		— should not exceed 1 cultivator operation whether done in spring or fall.		none	
	SPRING TILLAGE					1 Tandem Disc operation	
Landscape Unit 3	FLAT-RESIDUE REQUIREMENT (lbs/ac) (% Ground Cover)	700-1000 (35-50%)	700-1000 (35-50%)	1250-1600	525-800	3150-4000 (30-50%)	N/A
		— continuous cropping — no summerfallow. — crop residue should be distributed evenly on soil surface by using straw choppers and chaff spreaders and/or by harrow operations. — tillage in excess of that required to apply annhydrous ammonia is not recommended.					
	RESIDUE BALED FALL TILLAGE	none	none	N/A	none	N/A	N/A
	SPRING TILLAGE	1 cultivator operation	1 cultivator operation	N/A	1 cultivator operation	N/A	N/A
	RESIDUE NOT BALED FALL TILLAGE	— any combination of tillage practices that does not exceed 2 to 3 cultivator operations.		— should not exceed 1 cultivator operation whether done in spring or fall.		none	N/A
	SPRING TILLAGE					1 Tandem Disc operation	
Landscape Unit 4	FLAT-RESIDUE REQUIREMENT (lbs/ac) (% Ground Cover)	500-700 (25-35%)	500-700 (25-35%)	950-1250	375-525	2450-3150 (25-30%)	N/A
		— continuous cropping — no summerfallow. — crop residue should be distributed evenly on soil surface by using straw choppers and chaff spreaders and/or by harrow operations.					
	RESIDUE BALED FALL TILLAGE	— should not exceed 1 cultivator operation whether done in spring or fall		N/A	— should not exceed 1 cultivator operation whether done in spring or fall	N/A	N/A
	SPRING TILLAGE			N/A		N/A	
	RESIDUE NOT BALED FALL TILLAGE	— any combination of tillage practices that does not exceed 3 cultivator operations or 1 tandem disc. operation plus 1 cultivator operation.		— should not exceed 1 cultivator operation whether done in spring or fall		none	N/A
	SPRING TILLAGE					1 Tandem Disc operation	

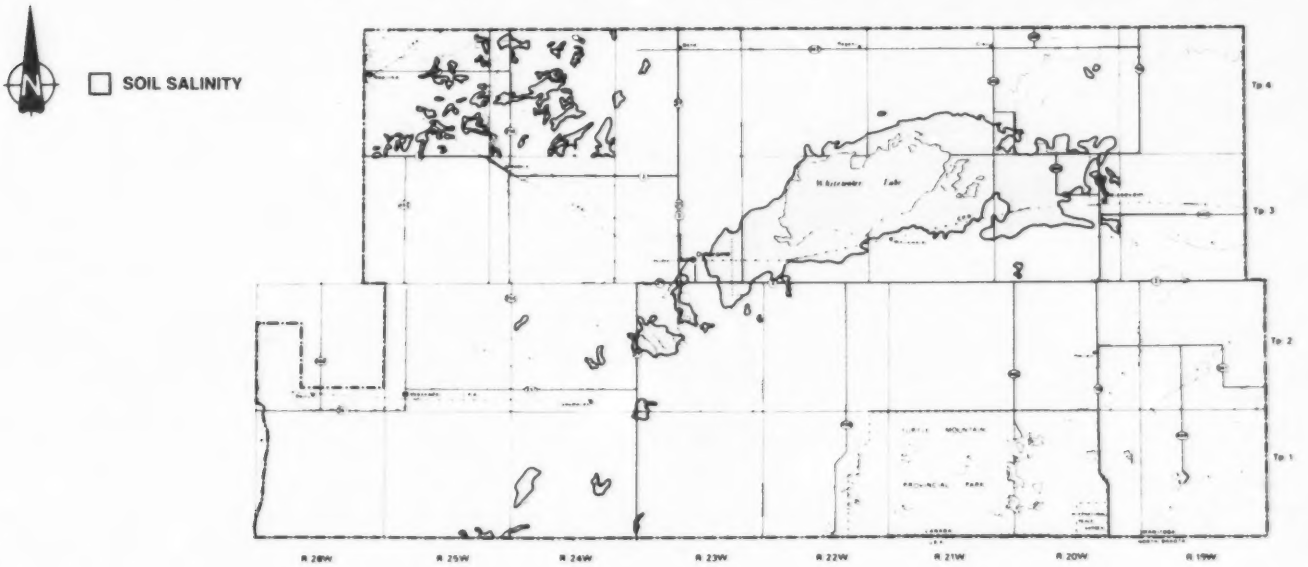
WATER EROSION POTENTIAL RISK MAP
(UNDER BARE COVER CONDITIONS)

UNIT NO.	CODE	RATING	% SLOPE
1A		SLIGHT	0-2
1B		SEVERE	13 +
2		VERY HIGH	7
3		HIGH	2-5
4		SLIGHT	0-2

WIND EROSION POTENTIAL RISK MAP
(UNDER BARE COVER CONDITIONS)

UNIT NO.	CODE	RATING	% SLOPE
1A		SEVERE	0-2
1B		SEVERE	13 +
2		VERY HIGH	7
3		HIGH	2-5
4		MODERATE	0-2





Guidelines for Controlling Water Erosion

Landscape Unit	
2, 3	Areas characterized by ravines should remain in native vegetation.
1B	Areas characterized by 13% and greater slope should be continuous forages.
2 and 3	Areas characterized by 7% and 2 to 5° slope should be in continuous cropping with no summerfallow in the rotation. Wind erosion control recommendations and practices should be used for water erosion.
4 1A	Wind erosion control recommendations and practices apply — water erosion in these areas is not a major soil problem — if the soils are managed for wind erosion protection they will in turn be protected from water erosion.

Guidelines for Controlling Soil Salinity

Recommendations

Areas within the District affected by moderate to severe salinity are shown on the Salinity Map. Salinity are dominently found in channels, level and depressional areas of the soil landscapes. Areas of soils affected by moderate salinity have conductivity values ranging from 8 - 12mmhos/cm whereas areas affected by severe salinity are characterized by valued of greater than 12mmhos/cm.

- soil affected by moderate to severe salinity should not be cultivated.
- annual crops should not be grown in areas affected by moderate to severe salinity.
- for areas affected with moderate salinity, crop mixtures composed of the following should be grown: Alfalfa, Sweet Clover, Bromegrass, Crested Wheat, Intermediate Wheat, Meadow Fescue and Reed Canary.
- for areas with severe salinity the following crops should be grown: Russian Wildrye, Slender Wheat Grass and Tall Wheat Grass.
- where they are established native grass species should be maintained and/or improved.

Water Resources

Proposed Programs 1988-1992

Grassed Waterways	$370,000
On-Farm Water Management	$270,000
Water Storage Large Projects	$195,000
Water Storage Small Projects	$ 80,000
TOTAL	$915,000

Proposed spending on water management programs over the next 5 years represents 38% of the Board's budget.

Grassed Waterways

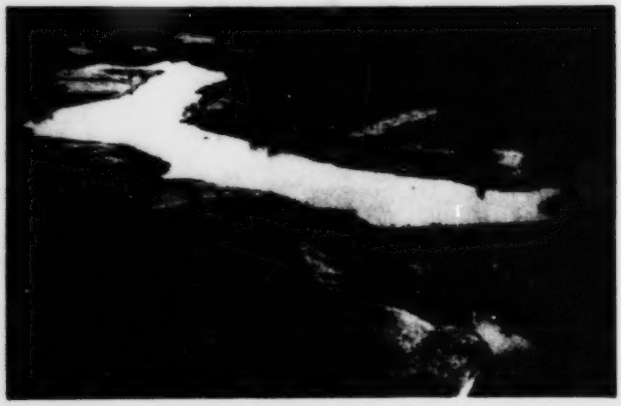
The Board will continue with its grassed waterways projects, but gradually reduce spending on them over the next 5 years, from $85,000 in 1988 to $50,000 in 1992.

To date, we have focussed on stabilizing natural channels in Zone 2 (see pages 14 and 15) to cut down on the length of time that fields adjacent to the channels are under water, following flood peaks. We have not tried building the channels large enough to eliminate overflows because such an approach is not cost-effective. Over the next 5 years, efforts will concentrate on tributaries.

On-Farm Water Management

Erosion Checks

We will install structures to reduce flow velocities in streams on steep slopes in Zone 1 (see pages 14 and 15). Structures will check erosion at sites and reduce downstream deposition.



Backflood Irrigation

The Board will set up at least one backflood demonstration project, within the next 5 years.

The site would probably fall in Zone 2 where there are plenty of locations that meet the criteria for backflood schemes: a reliable source of water; suitable soils; a good internal drainage system; a relatively flat area controlled by a single owner where water can be contained with a minimal amount of impoundment dyking; and an outlet channel on which delayed releases of water from the area do not aggravate downstream conditions.

Agricultural Water Management

The Board intends to prepare a comprehensive agricultural water management plan for Zone 3, taking into account environmental as well as economic factors.

Agricultural productivity in parts of Zone 3 could probably be enhanced by installing on-farm drainage works. But before any drainage systems are installed here or anywhere else in the District, we consider it imperative that their economic and environmental benefits and costs be evaluated in light of a comprehensive water management plan, such as we intend to prepare.

Pothole Consolidation

We plan to set up a pothole consolidation program for regulating and retaining surface water on individual properties in Zone 3. We would identify and evaluate potential sites based on experience gained from a pilot pothole consolidation project that currently demonstrates this zero-runoff concept in the District.

Proposed sites would be evaluated to ensure that benefits to the landowner in retaining surface water were not outweighed by project costs — construction, operation, and maintenance — as well as loss of wildlife habitat.

Water Storage

Over the next 5 years, the Board intends to complete 2 large and 10 small water storage projects. In size, these projects would be similar to the Adair Dam and the McArthur site, respectively.

There are numerous promising sites for both types of projects in the District, particularly Zone 1, and to a lesser extent in Zone 2 (see pages 14 and 15). Sites could be exploited for a range of uses, from irrigation, stockwatering, and community supply — to recreation, wildlife habitat, and runoff peak reduction.

Groundwater

We intend to work closely with municipalities and the Province to develop measures to protect local groundwater supplies. This stems from a concern that groundwater aquifers could become polluted through improper management of recharge areas. We may undertake small community projects to meet local needs.

In response to an offer of cooperation from the Department of Environment and local interest, the Board will introduce a new water quality monitoring program. Although details of the program have not been worked out, a total of $15,000 will be budgeted from the existing program to help the community monitor surface water quality. The program could begin in 1990 and is contingent upon financial assistance from the Department of Environment.

Urban Flood Protection

We do not intend to undertake any flood protection projects for Deloraine or Waskada over the next 5 years, although we appreciate that this position may need to be re-evaluated in the future.

Recreational Waters

There was some disagreement among residents over the development and use of certain recreation waters in the District. The Board's primary concern is the maintenance of high water quality and adequate water levels. We will not support future developments or projects that could adversely affect these aspects of our recreational waters.

Proposed 5-Year Program — Water Resources

	1988	1989	1990	1991	1992	TOTAL
Grassed Waterways	85,000	90,000	80,000	65,000	50,000	370,000
On-Farm Water Management	20,000	93,000	—	83,000	74,000	270,000
Water Storage — Large	—	—	100,000	—	95,000	195,000
Water Storage — Small	—	15,000	15,000	30,000	20,000	80,000
% of Board Total Program	33	45	40	35	37	38
SUB-TOTAL	105,000	198,000	195,000	178,000	239,000	915,000

Public Response to DRAFT Plan – Water Resources

There was general support for the Board's program, as proposed in the DRAFT Plan. The Grassed Waterway program was singled out as particularly beneficial. Some residents thought it should be promoted more aggressively.

It was suggested that better guidelines for landowner management and participation were needed in this and all water programs.

Agricultural water management was the subject of extensive discussion, privately, in public meetings, and in presentations to the Board. The issue is complex. Although area farmers would receive benefit from improved production, drainage systems are very expensive to build and maintain. Moreover, the Province has indicated a declining support for undertaking new drainage projects. There was general agreement that such a program should only be undertaken through a comprehensive water management plan involving substantial municipal and landowner participation.

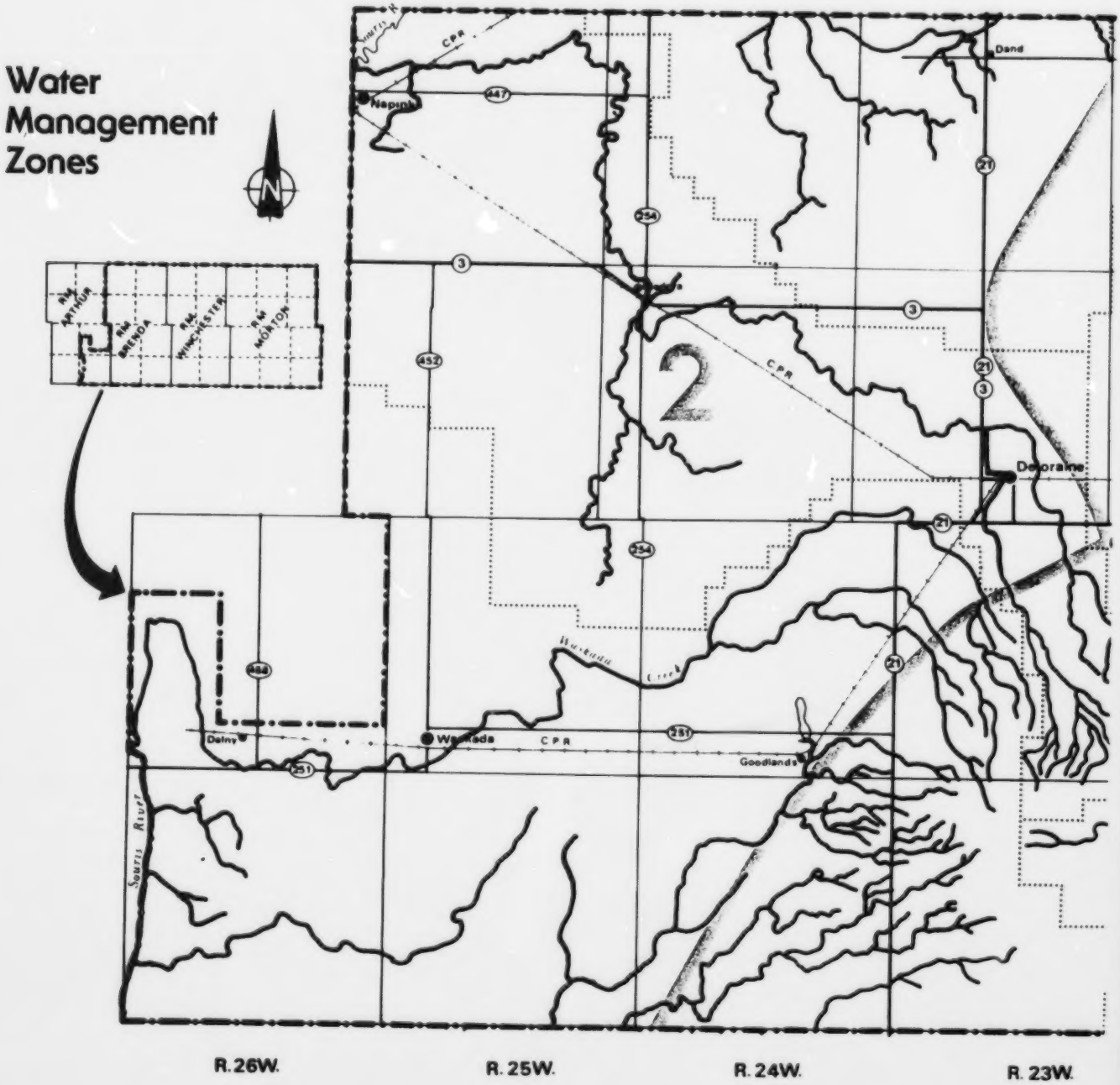
No concerns were voiced over the pothole consolidation and water storage programs.The Department of Environment indicated a positive response to the Board's concern over maintaining or improving surface water quality in the District. As a result, the Board has made a commitment to support a cooperative effort.

Zone 1

The major surface water hazards in this zone are sheet and gully erosion from overland flow and channel erosion on natural streams. Flooding of agricultural land is not a problem in this zone because of steep slopes and good natural drainage.

Zone 2

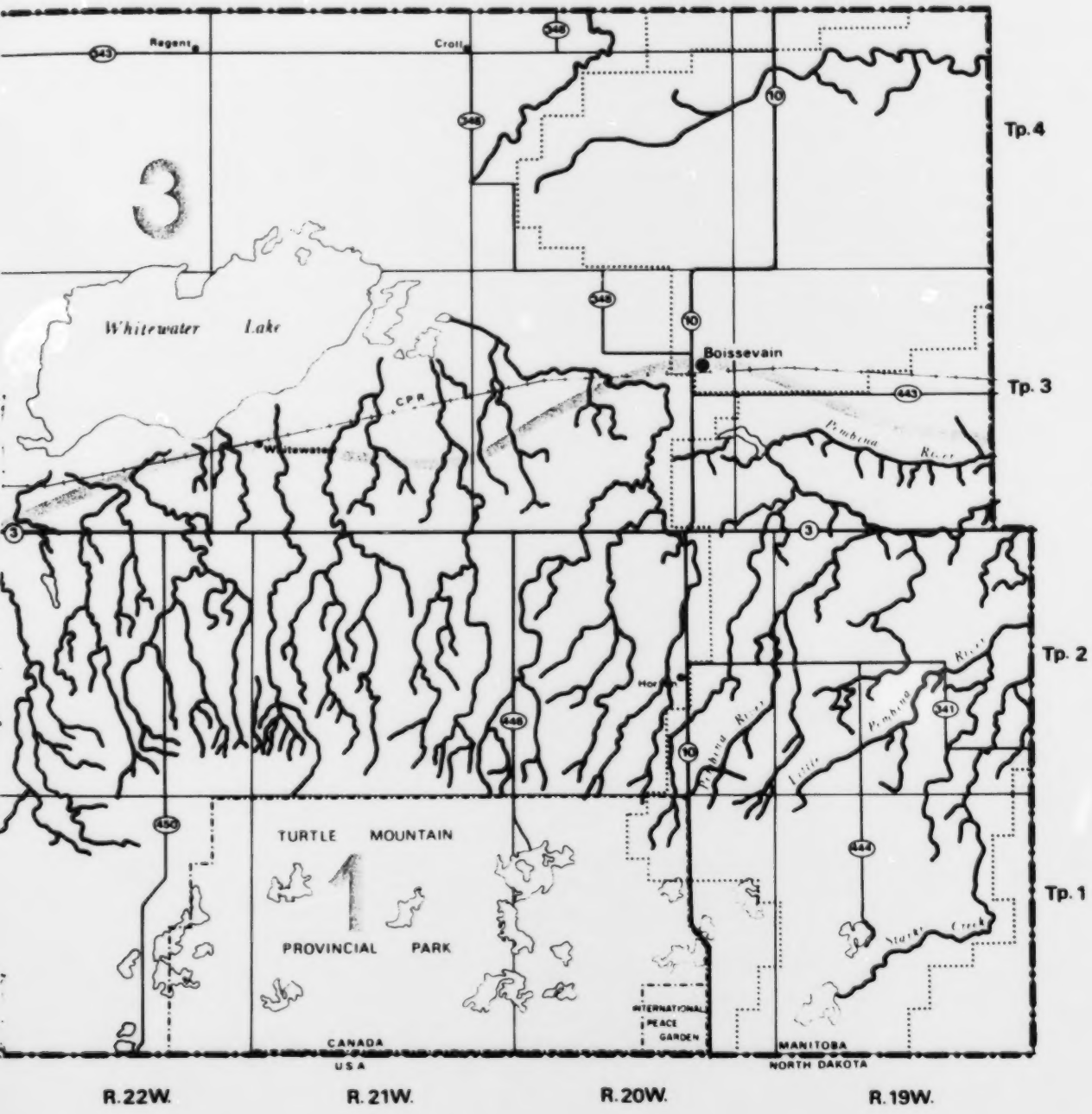
Parts of Deloraine and Waskada are susceptible to periodic urban flooding. Overflows from streams are the main cause of flooding of agricultural land. Localized depressions are sometimes flooded in areas without natural drainage outlets.



Zone 3

Lands in this zone are marked by poor natural drainage and numerous shallow depressions or temporary wetlands, many of which have been converted to farmland. Municipal road-building and individual drainage projects have complicated an already complicated surface water situation.

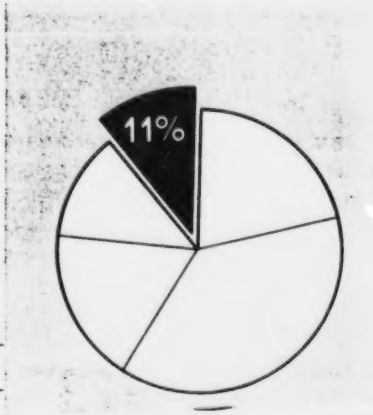
During wet periods, many acres of cultivated land may be flooded. Whitewater Lake, which has no surface outlet, enlarges dramatically during wet periods and floods surrounding lands that are used for agriculture during normal or dry periods.



Conservation Education

Proposed Programs 1988-1992

Extension		$109,000
Natural Areas		$ 82,000
Publications/ Equipment		$ 74,000
	TOTAL	$265,000



Proposed spending on conservation education programs over the next 5 years represents 11% of the Board's budget.

Conservation education and the distribution of conservation education materials to the community is considered by the Board to be a very high priority. It is the goal of the Board that all residents in the District are informed about the need for land, water and resource conservation, and about opportunities to participate in Board conservation programs.

Extension Program

The Board intends to:

- expand Grade 6 Conservation Day to include local schools outside the District
- work with local school boards for more conservation education in the school curriculum. We also plan to consult the Department of Education for ideas.
- sponsor an annual Grade 12 student competition for an award-winning conservation demonstration project in the District. The Board is considering an annual award of up to $1000.
- sponsor a conservation workshop for local teachers
- undertake a pilot adult education program in resource management
- make annual presentations on resource management in District schools, when requested
- provide displays on conservation within the District
- support Project WILD in the District
- explore the feasibility of introducing conservation education and ecology programs in local summer camps
- undertake soil and water management demonstration projects
- sponsor a student speaking competition on conservation themes
- prepare an annual conservation newsletter to be distributed to all residents in the District
- prepare a map of Board project areas
- sponsor a conservation district bus tour.

Natural Areas

The Board intends to:

- acquire local properties suitable for conservation education. A site on Whitewater Lake is a longterm objective.
- maintain and develop existing sites
- support the Provincial Ecologically Significant Areas Program
- develop and maintain, in cooperation with the International Peace Garden, an education project which would include displays of local crops.

Publications/Equipment

The Board intends to:

- increase spending on conservation books and literature for local libraries
- assist local schools in acquiring equipment for teaching conservation education.

Proposed 5-Year Programs — Conservation Education

	1988	1989	1990	1991	1992	TOTAL
Extension	19,000	20,000	21,000	22,000	27,000	109,000
Natural Areas	10,000	11,000	12,000	14,000	35,000	82,000
Publications/Equipment	12,000	13,000	14,000	15,000	20,000	74,000
% of Board Total Program	13	10	8	10	13	11
SUB-TOTAL	41,000	44,000	47,000	51,000	82,000	265,000

Public Response to DRAFT Plan - Conservation Education

Conservation Education proposals in the DRAFT Plan received a positive response from the community. Most people recognized the need for conservation education, although it was suggested that the Province must take a lead role.

As a result of the management plan process, the Board has held discussions with Manitoba Parks to undertake a joint program to employ a permanent, year-round conservation park/interpretative person in the District. Half of this individual's time would be spent on District conservation education programs and half on Turtle Mountain Provincial Park interpretative programs. Nothing has been formalized as yet, but the Board will continue to work on this.

The Board has also had discussions with the Historic Resources Branch about cooperative efforts on cultural and historic matters in the District.

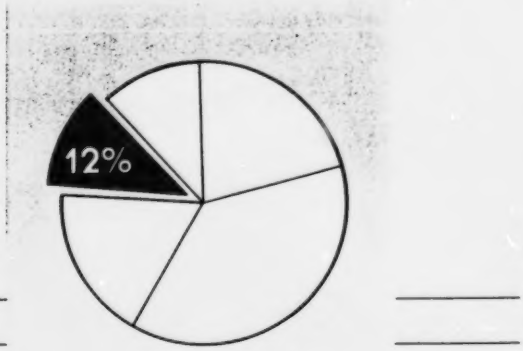
One major concern identified was that the Board, in the Conservation Education Program, should not acquire too much land because of the longterm management costs.

The need for an annual newsletter received widespread support. It was also suggested by a councillor that the project locations should be shown in the newsletter so that residents could visit the sites. An annual District bus tour was also suggested.

Other Resources

Proposed Programs 1988-1992

Habitat Development		$155,000
Habitat Protection		$ 87,000
Recreation		$ 36,000
	TOTAL	$278,000



Proposed spending on other resources programs over the next 5 years represents 12% of the Board's budget.

Habitat Development and Protection

The Board proposes the goal of developing or protecting at least 5000 acres of fish and wildlife habitat over the next 5 years.

Projects could take advantage of opportunities offered by other Board programs such as small water storage works. Success would depend on external funding and support by other agencies, organizations, and landowners.

We estimate that with proper support, every dollar we spend would be matched by a dollar from other sources.

Recreation

We propose to develop small recreation opportunities, as required, in association with other Board projects.

Proposed 5-Year Programs — Other Resources

	1988	1989	1990	1991	1992	TOTAL
Habitat Development	25,000	29,000	30,000	31,000	40,000	155,000
Habitat Protection	2,000	15,000	20,000	25,000	25,000	87,000
Recreation	3,000	4,000	7,000	10,000	12,000	36,000
% of Board Total Program	9	11	10	13	12	12
SUB-TOTAL	30,000	48,000	57,000	66,000	77,000	278,000

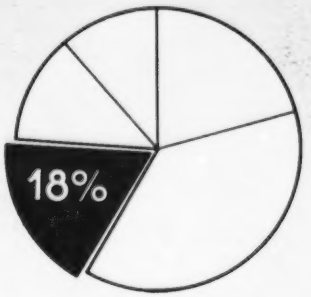
Public Response to DRAFT Plan - Other Resources

Most reviewers supported the Board's emphasis on developing or protecting 5000 acres of habitat, but many also felt that this effort must be combined with a strong wildlife education program.

There was agreement that marginal agricultural lands should be reclaimed through an incentive program, providing that landowners agree. Most felt that road allowances should not be broken. There was even a suggestion that municipalities should collect rent on road allowances which have been broken and utilize this money for conservation programs.

Maintaining vegetation along the escarpment was viewed as important. It was suggested that the Board target a significant portion of its habitat program to this area, and to maintaining or developing wetlands. Cooperative efforts and support from Manitoba Natural Resources and other agencies were considered essential to the success of this program.

Administration



Proposed spending on administration over the next 5 years represents 18% of the Board's budget.

Turtle Mountain Conservation District

The Board will administer District programs in accordance with the Management Plan.

An administrative charge will be included as part of total project costs in programs funded by, or cost-shared with, external agencies.

District Board

Seated:
Sandra Hainsworth, (Secretary-Treasurer)
Dennis Crowe, (Chairperson)
Bert Barwick,
Harriet McColl,

Standing:
Bill Poole, (Manager)
Jim Holden,
Roy Mann,
Jack Millions
Alan Ransom

Proposed 5-Year Program — Administration

	1988	1989	1990	1991	1992	TOTAL
Administration	82,000	83,600	85,500	86,700	89,200	427,000
% of Board Total Program	26	19	15	17	13	18

Subdistrict Members

Chain Lakes
Murray Dillabough
David Franklin
*Roy Mann
Russ Morden

Waskada Creek
*Jack Millions
Floyd Cheyne
Mac Corbett
Keith Hannah
Ken Harms
Cal Nestibo
Jim Smart
Keith Wells

Medora Creek
Donna Todd
*Dennis Crowe
R.A. Dietrich
*Jim Holden
Clint Whetter
John Dickinson

Elgin Creek — Whitewater Lake
*Alan Ransom
Gordon Holden
Roger Goethals
Archie Van Deveire

Upper Pembina
*Bert Barwick
Murray Duncan
Howard McCausland
Graeme Hicks

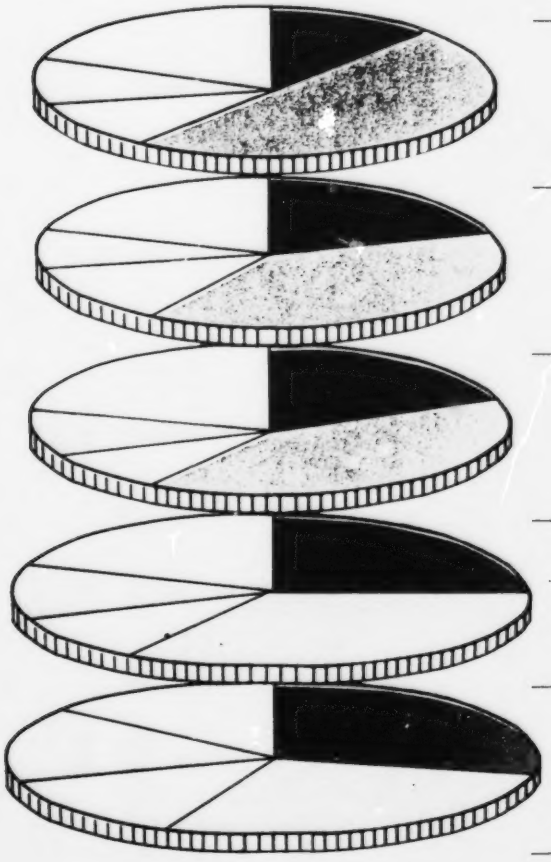
Provincial Appointee
Harriet McColl

* Chairperson and Board Member

Proposed Budget for 5-Year Overall Program

	1988	1989	1990	1991	1992	TOTAL
Agriculture	61,500	66,000	95,000	127,500	165,000	515,000
Water Resources	205,000	198,000	195,000	178,000	239,000	915,000
Conservation Education	41,000	44,000	47,000	51,000	82,000	265,000
Other Resources	30,000	48,000	57,000	66,000	77,000	278,000
Administration	82,000	83,600	85,500	86,700	89,200	427,000
TOTALS	319,500	439,600	479,500	509,200	652,200	2,400,000

Proposed Spending in Percentage of Board Budget 1988 to 1992



1988 — $319,500
- Agriculture — 19%
- Water Resources — 33%
- Conservation Education — 13%
- Other Resources — 9%
- Administration — 26%

1989 — $439,600
- Agriculture — 15%
- Water Resources — 45%
- Conservation Education — 10%
- Other Resources — 11%
- Administration — 19%

1990 — $479,500
- Agriculture — 20%
- Water Resources — 40%
- Conservation Education — 10%
- Other Resources — 12%
- Administration — 18%

1991 — $509,200
- Agriculture — 25%
- Water Resources — 35%
- Conservation Education — 10%
- Other Resources — 13%
- Administration — 17%

1992 — $652,200
- Agriculture — 25%
- Water Resources — 37%
- Conservation Education — 13%
- Other Resources — 12%
- Administration — 13%

Funding

The Board will gradually increase the funding for its overall program from $319,500 in 1988 to $652,200 in 1992. This represents a rate of increase of about 8% a year, or 4% after inflation.

Sources of funding for the program will be the Provincial Grant, local support through municipal levies, and other sources. The Board currently has a small reserve fund of $36,000.

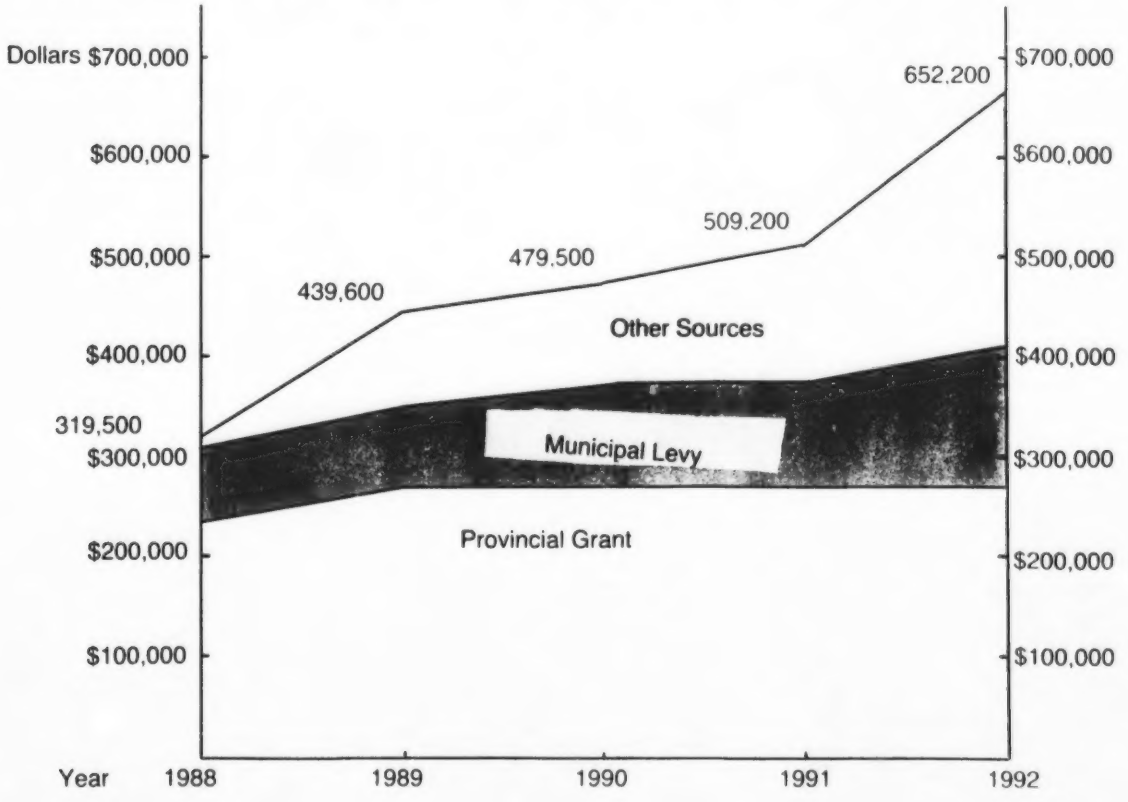
We have assumed that the Provincial Grant will remain constant at about $280,000 a year over the next 5 years. As local support for the program grows, however, we intend to request additional Provincial Grant dollars.

Over the next 5 years, local support for the program will be obtained through municipal levies which are expected to generate $504,000. In 1988, an additional $18,000 will be drawn from the Board operating surplus, bringing the total local support to $522,000 over the next 5 years.

This represents a change from the DRAFT Management Plan which proposed going from a 4 to a 5-mil levy in 1988. With the deferral of the major water storage project and the use of current Board surplus funds, the proposed increase has now been postponed to 1989. Surplus funds accumulated in 1988 and 1989 will be utilized to finance major water storage projects proposed for 1990 and 1992.

	1988	1989	1990	1991	1992	5-Year Total
mil rate	4	5	6	6	7	$504,000
municipal contribution	72,000	90,000	108,000	108,000	126,000	

The rest of the Board's program will be made up from external sources such as payments from benefitting landowners, special interest groups, and agencies. Funding from these other sources is expected to increase from about 12% of the budget in 1988 to about 38% in 1992, as shown below.



20-Year Vision – Turtle Mountain Conservation District

Board Integrated Program

The Board's goal is to ensure, over the longterm, the wise management, use and development of District soils, water, and natural resources, and to maintain or improve the high quality of life currently enjoyed by residents of the District.

Agriculture is the major industry in the District and is expected to maintain its importance into the future. Proper soil and water conservation is essential for the continued long-term viability of agriculture.

Management of all resources must be compatible with the needs and wants of District people, and take into account the environmental limitations of the District.

The Board proposes to take a leadership role in the conservation of land and water resources in the District, and will act as a catalyst on conservation issues to ensure problems are solved and opportunities developed.

The Board proposes to encourage local municipal councils and planning districts to adopt land and water use by-laws and policies consistent with Board management objectives. Consultation and cooperation with local municipalities and planning districts is a very important part of the Board's vision.

The protection of natural, cultural and historic resources will be included in the Board's program.

The Board will continue to acquire lands for interpretative educational/conservation purposes when such acquisition supports the management plan.

The Board will seek continuing public participation in its programs, planning and decision-making.

Agriculture

The Board will promote practical land management programs to preserve topsoil for future generations.

It will work with local municipalities and landowners to maintain or increase permanent vegetative cover on erodible lands along the escarpment.

Water Resources

The Board will plan, develop and maintain safe, efficient and effective water control works necessary to achieve rational water management on a watershed basis.

Multiple use water projects should receive priority over single purpose projects.

For new water management projects, the Board will ensure that project benefits are given comparable consideration with project costs.

The Board will attempt to ensure that any surface water management projects do not adversely affect local groundwater quality or quantity. Provincial surface water and groundwater quality objectives and standards must be met by the District.

Groundwater management is also of concern to the Board because of widespread variations in the quantity, quality, and availability of groundwater across the District.

The Board is concerned about the possible pollution of groundwater supplies through improper management of aquifer recharge areas.

The maintenance or improvement of the quality of surface water in the District is of major concern to the Board. It is the Board's goal to ensure that the quality of the surface water resources within the District is protected such that present and future uses are not adversely affected. To this end, the Manitoba Surface Water Quality objectives will be used for guidance on the quality requirements of the various surface water uses within the District. Development should take place only in such a manner that these objectives will be met.

Conservation Education

The Board's conservation education program is designed to:

- inform the community in the conservation of land, water, and other natural resources
- instill a longterm conservation ethic, particularly in our children
- keep the community informed on current conservation programs.

A conservation/interpretive education site on Whitewater Lake is a long-term goal of the Board.

Other Resources

The Board has developed the following Management guidelines which it will attempt to follow in the implementation of its Other Resources program.

The Board will encourage and support local programs which reserve, restore or enhance wildlife habitat. Key upland areas include the escarpment and the Chain Lakes area. Wetlands are considered to be a high priority across the District.

Manitoba Habitat Heritage Program, Wildlife Habitat Canada and the North American Waterfowl Management Plan are three key agencies/programs which the Board will support. The Board will attempt to secure funding from external agencies to supplement wildlife programs.

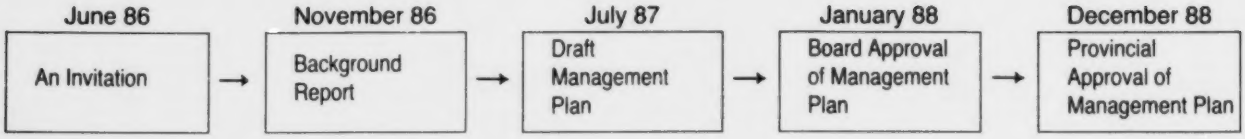
The Board will request that rural municipalities pass bylaws restricting the breaking of non-maintained road allowances and wildlands. Certain road allowances will, on request, be seeded to forage crops, and trees or shrubs.

The Board does not intend to undertake any program to regulate Whitewater Lake levels within the next 5 years, nor will it undertake, on its own, to acquire marginal agricultural lands around the lake.

In fisheries management, the Board does not feel that it can take a leadership role but can support and encourage others to do so. It supports the priorities set out by the Manitoba Fisheries Branch. Where there is potential for fisheries development to complement Board projects or priorities, such potential will be promoted and supported.

Planning Process

The process for preparing the Board's management plan started in June 1986. It followed four steps:



The community was consulted throughout the entire process, as well as, many Provincial Government staff and the Conservation Districts Commission.

Although the management plan has now been approved by the Minister of Natural Resources, the process does not end here. The Board must now begin the difficult job of implementation. The plan is not etched in stone. We still need your continuing input if it is to continue to meet our needs.

We will keep you up-to-date on progress and changes for the plan with an annual newsletter. And the plan will be fully reviewed and updated in 1992.

Working with the Plan

The Turtle Mountain Conservation District management plan was prepared to guide the Board in selecting and implementing programs to manage wisely, the natural resources of our District. It will only be successful if the Community participates with us to make it work.

We are currently developing eligibility criteria to help us make decisions on where and when the project should be implemented, and who should be involved. For more information about our programs, and whether you qualify for funding, please contact your municipal office, subdistrict chairman, or:

District Manager
Turtle Mountain Conservation District
220 South Railway
Deloraine, Manitoba
R0M 0M0

Phone: 747-2530

The Turtle Mountain Conservation District

Covering just over 1000 square miles with a total land assessment of nearly $18 million, the Turtle Mountain Conservation District includes all of the R.M.'s of Brenda, Morton, and Winchester and part of the R.M. of Arthur. Boissevain, Deloraine, and Waskada are also District Members.

Topography varies from the Turtle Mountain upland to the flat expanse of Whitewater Lake basin. Soil types vary from clays and clay loams to sands. Moisture conditions frequently differ widely within the area.

Often there is not enough soil moisture available to crops during critical periods of the growing season.

While annual crop production is the dominant land use in the District, forages and livestock are important parts of our agricultural industry. Petroleum exploration and production, recreation, and service industries are also important contributors to the local economy.

With such a diverse range of conditions, resource management becomes extremely challenging.

The Management Plan described in this brochure represents the Board's first attempt to meet that challenge.